

What is claimed:

1. A method for configuring and performing processing in a digital oscilloscope,
comprising the steps of:

receiving one or more input parameters;

5 defining a plurality of processing elements based upon said received parameters; and
connecting said plurality processing elements to define a processing web.

2. The method of claim 1, wherein at least two of said plurality of processing
elements are updated at different speeds.

10 3. The method of claim 2, wherein a processing object controls the update of said at
least two of said processing elements.

4. The method of claim 2, wherein one of said at least two of said plurality of
processing elements operates at a higher acquisition speed and another of said at least two of said
plurality of processing elements operates at a lower, display speed.

15 5. The method of claim 2, wherein said at least two of said plurality of processing
elements are idle when not updated.

6. The method of claim 2, wherein one of said at least two of said plurality of
processing elements is of a cumulative type running at a higher speed, and another of said at least
two of said plurality of processing elements is of a non-cumulative type running at a lower
speed.

20 7. A method of configuring and performing processing in a digital oscilloscope,
comprising:

receiving one or more instructions;

defining a plurality of processing elements based upon said received instructions;

connecting said plurality of processing elements to define a processing web for performing a desired processing; and

synchronizing said plurality of processing elements to generate a synchronized result.

8. The method of claim 7, wherein at least two of said plurality of processing
5 elements are updated at different speeds.

9. The method of claim 8, wherein one of said plurality of processing elements requests required data from an upstream source.

10. The method of claim 9, wherein said request is made upon activation of an update pin of said one of said plurality of processing elements.

10 11. The method of claim 8, wherein one of said plurality of processing elements requests data from an upstream source when data is requested from it by a downstream processing element.

12. The method of claim 11, wherein no buffers are present between said plurality of processing elements.

15 13. The method of claim 7, wherein at least one of said plurality of processing elements receives M inputs on an input pin and produces N output results on an output pin, where M is an integer equal to or greater than 1 and where N is an integer equal to or greater than 0.

20 14. A method for configuring and performing processing in a digital oscilloscope, comprising the steps of:

defining a plurality of processing elements;

connecting said processing elements in a predetermined relationship to allow for a desired processing; and

controlling said plurality of processing elements to manage the proper flow of data through the plurality of processing elements.

15. The method of claim 14, wherein said controlling of said plurality of processing elements is performed by updating one or more of said plurality of processing elements.

5 16. The method of claim 15, wherein a first of said processing elements is updated at a higher speed, and a second of said processing elements is updated at a lower speed.

17. The method of claim 16, wherein the activation of said first and second processing elements are synchronized.

10 18. The method of claim 15, wherein said updating one or more of said plurality of processing elements is performed in response to modification that new acquisition data is available.

19. The method of claim 15, wherein said updating one or more of said plurality of processing elements is performed in response to a downstream request for data.

15 20. The method of claim 19, wherein said downstream request for data is made by a rendering processing object.

21. The method of claim 15, wherein said updating one or more of said plurality of processing elements is performed in response to a modification of the definition of any of said plurality of processing elements.

20 22. A processing web defining processing in a digital oscilloscope, comprising:
plurality of processing elements that are defined based upon one or more received input parameters, each of said processing elements performing a discrete processing function; and
a plurality of connections between said plurality of processing elements to define a flow of information therebetween.

23. The processing web of claim 22, wherein at least two of said plurality of processing elements are updated at different speeds.

24. The processing web of claim 23, wherein a processing object controls the update of said at least two of said processing elements.

5 25. The processing web of claim 23, wherein one of said at least two of said plurality of processing elements operates at a higher acquisition speed and another of said at least two of said plurality of processing elements operates at a lower, display speed.

26. The processing web of claim 23, wherein said at least two of said plurality of processing elements are idle when not updated.

10 27. The processing web of claim 23, wherein one of said at least two of said plurality of processing elements is of a cumulative type running at a higher speed, and another of said at least two of said plurality of processing elements is of a non-cumulative type running at a lower speed.

15 28. A processing web defining processing in a digital oscilloscope, comprising:
a plurality of processing elements defined in accordance with one or more received instructions; and

a plurality of defined data connections connecting said plurality of processing elements to define a processing web for performing a desired processing;

20 wherein said plurality of processing elements are synchronized to generate a synchronized result.

29. The processing web of claim 28, wherein at least two of said plurality of processing elements are updated at different speeds.

30. The processing web of claim 28, wherein one of said plurality of processing elements requests required data from an upstream source.

31. The processing web of claim 30, wherein said request is made upon activation of an update pin of said one of said plurality of processing elements.

5 32. The processing web of claim 28, wherein one of said plurality of processing elements requests data from an upstream source when data is requested from it by a downstream processing element.

33. The processing web of claim 32, wherein no buffers are present between said plurality of processing elements.

10 34. The processing web of claim 28, wherein at least one of said plurality of processing elements receives M inputs on an input pin and produces N output results on an output pin, where M is an integer equal to or greater than 1 and where N is an integer equal to or greater than 0.

15 35. A processing web defining processing in a digital oscilloscope, comprising:
a plurality of processing elements; and
a plurality of defined connections for connecting said processing elements in a predetermined relationship to allow for a desired processing;

wherein said plurality of processing elements are controlled to manage the proper flow of data through the plurality of processing elements.

20 36. The processing web of claim 35, wherein said controlling of said plurality of processing elements is performed by updating one or more of said plurality of processing elements.

37. The processing web of claim 36, wherein a first of said processing elements that is to be updated at a higher speed, and a second of said processing elements that is to be updated at a lower speed.

5 38. The processing web of claim 37, wherein the updating of said first and second processing elements are synchronized.

39. The processing web of claim 36, wherein said updating one or more of said plurality of processing elements is performed in response to notification that new acquisition data is available.

10 40. The processing web of claim 36, wherein said updating one or more of said plurality of processing elements is performed in response to a downstream request for data.

41. The processing web of claim 40, wherein said downstream request for data is made by a rendering processing object.

15 42. The processing web of claim 36, wherein said updating one or more of said plurality of processing elements is performed in response to a modification of the definition of any of said plurality of processing elements.